Series 1 Dark-eyed Intense	Series 2 Dark-eyed Dilute	Series 3 Pink-eyed Intense	Series 4 Pink-eyed Dilute
Gray	Blue-gray	p. Gray[3]	p. Pale gray
Black	Blue	p. Blue[4]	p. Pale blue
Cinnamon	Pale cinnamon	p. Cinnamon	p. Pale cinnamon
Chocolate	Pale chocolate	p. Lilac	p. Pale lilac
Yellow	Cream	p. Yellow	p. Cream
Albino	Albino	Albino	Albino

A *dilute* dark-eyed cinnamon ♀ 682 was mated with a *pink-eyed* gray ♂ 691. From this mating fifteen young were obtained, all *intense* dark-eyed grays (like the wild house-mouse).

From these grays, when bred together, there have been obtained up to the present time fifteen young of at least six different color varieties distributed as shown below. On the hypothesis, which we have advanced, the expected number of varieties is eight; their expected frequencies in a total of sixty-four young are also shown below. It is not surprising that, in so small a number of young as fifteen, two of the smallest of the expected classes should be unrepresented, but it is not yet certain that they are unrepresented, since the visible difference between p. cinnamons and p. grays is probably so slight that breeding tests may be required to differentiate the two classes.

	Dark-eyed				Pink-eyed			
	gray (intense)	blue gray (dilute)	cinnamon (intense)	pale cinnamon (dilute)	p. gray (intense)	p. pale gray (dilute)	p. cinnamon (intense)	p. pale cinnamon (dilute)
Expected	27	9	9	3	9	3	3	1
Actual	4	3	2	1	4?	1?	?	?

The cross is evidently one involving three independent Mendelian factors, viz., (1) black *vs.* brown pigmentation; (2) intense *vs.* dilute pigmentation; and (3) dark-eyed *vs.* pink-eyed (or, as we should prefer to call it, the full amount of pigment *vs.* a reduced amount).

The known Mendelian factors concerned in the color variation of mice now number nine. They are:

1. *C*, the general *color* factor, the basis of all pigment in the skin and coat; its three modifications follow next.
2. *d*, the *dilution* factor.
3. *s*, the factor which causes *spotting* with white.
4. *p*, the *pink-eye* (or *paucity*) factor; next follow the three specific color factors and their two modifiers.
5. *Y*, the *yellow* factor.
6. *Br*, the *brown* or chocolate factor.
7. *B*, the *black* factor.
8. *R*, the *restriction* factor, which when present restricts black and brown pigments to the eye and leaves the coat yellow.
9. *A*, the *agouti* factor which operates by excluding black and brown pigments from particular parts of the hair, thus producing the ticked gray or cinnamon coat.

An explanation of the symbols chosen to express these factors will be given elsewhere. Grateful acknowledgment is made of assistance rendered by the Carnegie Institution of Washington through a grant to the senior author.

W. E. Castle,
C. C. Little
Forest Hills, Boston, Mass.,
August 11, 1909

THE FORTIETH GENERAL MEETING OF THE AMERICAN CHEMICAL SOCIETY. III

DIVISION OF PHYSICAL AND INORGANIC CHEMISTS

Charles H. Herty, chairman

Wilder D. Bancroft, secretary

On the Volumetric Estimation of Uranium and Vanadium: Edward DeMille Campbell and Chas. E. Griffin.

A brief review of the methods previously published is given. Experiments show that vanadium may be satisfactorily determined by reduction with sulphur dioxide and titration with permanganate and vanadium and uranium together may

be reduced by boiling with a spiral of heavy aluminum wire and titration with permanganate after the removal of the aluminum wire spiral and addition of excess of ferric sulphate.

In the analysis of carnotite ore after solution of the ore in nitric acid and evaporation with sulphuric acid the vanadium and uranium are separated from iron by double precipitation of the latter with sodium carbonate in the presence of a little hydrogen peroxide. In the acidified solution the vanadium is first determined by reduction with sulphur dioxide to V_2O_4 and titration with standard permanganate, after which the vanadium is reduced by boiling with aluminum to V_2O_2 and the uranium to UO_2. After complete reduction of the uranium and vanadium acidified ferric sulphate is added and the solution titrated with standard permanganate.

The Development of Positives after Short Exposures: WILDER D. BANCROFT.

If we expose a plate for ten minutes on a sunny day, the plate will develop as a positive instead of a negative. The theory of this phenomenon is quite simple and I need not go into it now. My problem to-day is how to produce the same result with a short exposure in the camera as with a long one, and we have worked out three methods of doing this.

The first way is to make the plate much more sensitive to light. This can be done by dipping the plate in a developer solution and exposing it wet. The light acts in the presence of a powerful depolarizer, the developer, and in consequence the chemical action is much greater for a given exposure. Incidentally, this method can also be used for shortening the exposure necessary to produce a negative.

The second way is to expose the plate after it has been in the camera to a uniform light for a short time. Since the sensitiveness of the plate to light of a given wave-length changes during the exposure, we can change the amount of contrast by changing the color of the fogging light. A more satisfactory result is obtained with a greenish-blue light rather than by the white light which has ordinarily been used. Since the intensity of the fogging light is greater at the air side of the film than at the glass side, the decomposition of the silver bromide is consequently greater there. By use of a suitable developer, we have succeeded in developing a plate so that there is a positive image on the air side and a negative image on the glass side.

The third method is that of a slow reduction before development. If the films in a kodak are not developed until several months after the exposure, there is always the possibility of their developing as positives. This is undoubtedly due to slow decomposition of the film which reduces the silver bromide to a lower stage and therefore duplicates the effect of a longer exposure. We have produced the same effect in the laboratory under somewhat definite conditions. The plate is left for a long time in a very weak developer and is then treated with an ordinary developer. As was predicted, the plate develops as a positive under these circumstances.

A fourth method is to add sulpho-urea to the developer as suggested by Waterhouse. This method gives beautiful positives; but we are not yet certain as to the theory and we are still working at this.

The Condensation of Water by a Substance in Solution: F. K. CAMERON and W. O. ROBINSON.

The condensation of water due to the presence of dissolved electrolytes is calculated from accurate specific gravity determinations on solutions of concentrations below 0.1 normal. In the cases of solutions of hydrochloric and nitric acids the concentration-condensation curves pass through maximum points. The investigation was undertaken primarily to find the effect of condensation, by a substance in solution, on suspensions and flocculation, but no generalizations of a causal character can be made from the data obtained.

The Dielectric Constants of some Inorganic Solvents: OSCAR C. SCHAEFER and HERMAN SCHLUNDT.

This communication is a continuation of the earlier work of Schlundt on the dielectric constants of inorganic solvents. The values obtained for the three halogen hydrides—hydrogen iodide, hydrogen bromide, hydrogen chloride—have been determined. The value of the dielectric constant of solid hydrogen cyanide is also reported as new value, that of the liquid having been published some years ago.

Solvents for Use with the Munroe Crucible: OTIS D. SWEET.

About forty-five solvents are enumerated. A table including about 120 precipitates and the corresponding solvents is also given.

Organic Amalgams: H. N. MCCOY and W. C. MOORE.

Discoveries in radioactivity in the last decade clearly show that some, at least, of the metallic

elements are not permanent, but disintegrate spontaneously, forming other elements. On the other hand, many organic radicles behave like elements, passing unchanged through many transformations. The ammonium radicle, in the form of ammonium amalgam, has marked metallic properties. We have made other amalgams of compound radicles, one of which, that of tetramethyl ammonium, has properties more typically metallic than has ammonium amalgam.

Tetramethyl ammonium amalgam is readily obtained by the electrolysis of an absolute alcohol solution of tetra-methyl ammonium chloride at 0°. Unlike ammonium amalgam, the new organic metal does not have any tendency to puff up; at 0° to 20°, it is a crystalline solid of characteristic metallic luster. If dry, it is stable at —80°; but decomposes at the rate of about five per cent. a minute at 20°. It reacts violently with liquid water, giving a variety of products and in addition colloidal mercury. When exposed to air at room temperature, it reacts with the moisture and becomes covered with a white coating of tetramethyl ammonium hydroxide—a reaction completely analogous to that shown by sodium amalgam. It precipitates metallic copper from an alcoholic solution of cupric nitrate and metallic zinc from an alcoholic solution of anhydrous zinc chloride.

The single potential difference between the amalgam and a semi-normal solution of the chloride at 0° is nearly two volts. This remains nearly constant for many minutes; thus, in one case, the potential dropped gradually from 1.92 volts to 1.87 volts in thirty-eight minutes. Other complex amalgams have been studied, but none is as stable as tetramethyl ammonium amalgam. We suggest that metallic properties depend on the ability of the atom *or radicle* to lose one or more electrons. Metals may be compounds.

The Zinc Antimony Alloys: B. E. CURRY.

The equilibrium diagram is presented showing the phases to be pure zinc, pure antimony, the compound ZnSb, and three series of solid solutions, α, β and γ.

Corrosion of Cadmium in Nitrate Solutions: G. R. WHITE.

When cadmium is made anode in 75 per cent. sodium nitrate solution and a current of .4 ampere is passed through the corrosion is greater than theoretical. This difference is affected by current density and temperature.

The corrosion produced appeared as a white or grayish precipitate and did not contain metallic cadmium. The solution contained nitrites in large quantities after corrosion began. Analysis indicates the formation of cadmium hydroxid. The formation of nitrites may produce the high corrosion efficiency by the formation of cadmous compounds.

Some Organic Compounds of Beryllium: CHAS. L. PARSONS and GEO. J. SARGENT.

During the last two years Glassman, publishing in the *Berichte*, and Tanatar, publishing in the *Journal of the Russian Physical and Chemical Society*, have claimed to prepare several beryllium salts of organic acids, for which they have claimed definiteness of composition. Glassman announces the dichloracetate, cyanacetate, monochloracetate, monobromacetate, monobrompropionate, lactate, glycolate, trichloracetate, ethylglycolate, phenylglycolate, chloropropionate and salicylate, to which he gives the typical formulas of either $Be_4O(A)_6$ or $Be_2O(A)_2$. Tanatar claims to have prepared the crotonate, isocrotonate, lævulinate and succinate, to which he gives the typical formulas $Be_4O(A)_6$ and the tricarballylate, citrate, salicylate, phthalate, lactate and benzoate, to which he gives somewhat more complex formulas.

These salts were all produced by saturating the aqueous solution of the acid with basic beryllium carbonate and evaporating to dryness, and the formulas were for the main part derived from the simple calculation on the beryllium oxide found, adding water of crystallization when necessary. In one or two instances the lowering of the freezing point in organic solvents was obtained as additional evidence of constitution. For the main part the residues were glassy, gummy masses, although in one or two instances they were thought to be crystalline.

These results were so at variance with previous researches on beryllium compounds where it had been shown that it was next to impossible to obtain definite compounds of such weak acids from aqueous solution that we undertook a careful research in regard to the definiteness of composition of some of these salts and examined more especially the succinate, lactate, glycolate, salicylate, citrate, phthalate, benzoate, picrate and monochloracetate. As a result it was proved without any question that the residues obtained were all of a glassy, glutinous nature and that their composition varied through wide limits according to the extent of the saturation. As one of us has already shown that the salts of beryl-

lium dissolve varying quantities of beryllium carbonate or hydroxide according to the concentration of the acid solutions used, and, further, that the freezing point of solutions containing this material was raised rather than lowered by increasing the quantity of the beryllium hydroxide dissolved, this evidence of constitution is overthrown.

Quite different from these weak acids, however, was the case with the comparatively strong trichloracetate $Be(CCl_3CO_2)_2 2H_2O$, which does yield a perfectly definite compound if prepared, as salts of beryllium of this kind must always be prepared, from solution containing an excess of the acid. This salt was made in several different ways and repeatedly recrystallized, and was shown to have perfect definiteness of composition, losing its two molecules of water of crystallization at 100°. We have no hesitancy in saying that none of the above mentioned acids can be prepared as definite compounds from water solution with the exception of the trichloracetate, and it is probable that this will be found to be true of most acids having a dissociation constant lower than that of trichloracetic acid. Attempts were also made to make definite salts of these acids from solution in organic solvents, but without success.

The Bromates of the Rare Earths—Part II., The Bromates of the Cerium Group and Yttrium: C. JAMES and W. F. LANGELIER.

The pure bromates of lanthanum, cerium, praseodymium, neodymium, samarium and yttrium were prepared from the pure sulphates by treating them with barium bromate and their properties studied.

All of these bromates were found to have the formula $R_2(BrO_3)_6 18H_2O$ and when heated to 100° they were all converted into a hydrate containing $4H_2O$ with the exception of yttrium bromate, whose hydrate at 100° contains $6H_2O$ and cerous bromate. They all lost their water of crystallization and became anhydrous at 150° and at a higher temperature they were all decomposed with evolution of both light and heat. Indeed, praseodymium bromate loses all of its water of crystallization at 130° and decomposes at 150°, while cerous bromate decomposes at a much lower temperature, approximating 50°. In water solution cerous bromate gradually evolves oxygen, precipitating an insoluble residue and leaving behind in solution probably ceric bromate, which, however, was not isolated on account of the ease of its decomposition, its strong aqueous solution being indeed so active an oxidizing agent that it causes explosive combustion of organic material such as filter paper or cotton when poured upon it.

The general results may be summarized as follows:

	Melting Point	100 Parts H_2O Dissolved
$La_2(BrO_3)_6.18H_2O$	37.5	416
$Ce_2(BrO_3)_6.18H_2O$	49	—
$Pr_2(BrO_3)_6.18H_2O$	56.5	190
$Nd_2(BrO_3)_6.18H_2O$	66.7	146
$Sm_2(BrO_3)_6.18H_2O$	75	114
$Yt_2(BrO_3)_6.18H_2O$	74	168

Some Physical Properties of Sulphur Trioxide: D. M. LICHTY, University of Michigan.

Sulphur trioxide, purified by repeated distillation of the commercial article over pure phosphorus pentoxide in a vessel[1] exhausted to 50 mm. or less, melts sharply at 16.8° (Weber 14.8°), boils at a temperature not exceeding 44.8° under 760 mm. pressure, and seems to be purer than that prepared by Weber.[2] If kept from contact with moisture, it retains its sharp melting point and at room temperature is in appearance a very transparent mobile liquid which really consists of a liquid variety, containing, dissolved in it, and presumably in equilibrium with it, a considerable quantity of a solid variety. The depression of the freezing point of phosphorus oxychloride, caused by this mixture, leads to the formula SO_3.[3] The coefficient of expansion is very high, agreeing essentially with that found by Schulz-Sellak[4] and by Schenck.[5] If exposed to a relatively small amount of moist air, the liquid solidifies more or less completely at room temperature. The depression of the freezing point of phosphorus oxychloride, produced by a completely solidified sample, also leads to the formula SO_3. The ordinary asbestos-like needles seem to be a polymer having the formula S_2O_6.[6]

The Modern Manufacture of White Lead: J. S. STANDT.

The paper gives the description and chemistry of the various processes of white-lead manufacture in use, including the Old Dutch, English, French, Milner's, etc. It enumerates some of the more important English and American patents.

[1] *J. Am. Chem. Soc.*, 30, 1836.
[2] *Pogg. Ann.*, 159, 313 (1876).
[3] Oddo, *Gazz. chim. ital.*, 31, II., 158 (1901).
[4] *Ben.*, 3, 215.
[5] *Ann.*, 316, 1 (1901).
[6] Oddo, *loc. cit.*

The paper deals largely with the description and chemistry of the Carter process of white-lead manufacture. By this "quick process" is produced a white lead having the requisite properties of a good paint.

The following papers were reported by title:

The Physical Chemistry of Certain Arrowheads: W. R. WHITNEY.

The Electrical Conductivity of Concentrated Solutions: E. C. FRANKLIN.

Rapid Electro-analysis with Graphite Cathode Dish: J. W. TURRENTINE.

Effects of Surfaces on Reactions: F. K. CAMERON.

Behavior of the Higher Hydronitrides in Liquid Ammonia: A. W. BROWNE and T. W. B. WELSH.

Valence—What is it? C. H. HERTY.

The Effect of Salts on the Toxicity of Phenol Solutions: W. LASH MILLER.

The Formation of Carbon Dioxide in Solutions of Thorium Nitrate: R. B. MOORE.

Observations on the Use of the Auxiliary Electrode in Rapid Electrolytic Analysis: E. P. SCHOCH, ETHEL SYKES, D. J. BROWN and A. G. KOENIG.

The Atomic Weight of Silver: T. W. RICHARDS and H. H. WILLARD.

Basic Magnesium Chlorides: W. O. ROBINSON and W. H. WAGGAMAN.

The Relation between Fluidity and Vapor-pressure: E. C. BINGHAM.

The Tensile Strength of the Zinc-aluminum Alloys: V. J. SKILLMAN.

The Reduction of Nitrobenzene by Iron: R. C. SNOWDON.

The Behavior of the Iron Anode in Various Electrolytes: E. P. SCHOCH and C. P. RANDOLPH.

The Chemical Properties of the Radioactive Products of Thorium: H. N. MCCOY.

A New Apparatus for Regulating the Supply of Heating Mediums for Scientific and Similar Apparatus: GEO. E. EDELEN.

The Size of Pores in Membranes and Osmotic Effects: S. LAWRENCE BIGELOW.

Lead Silicates: H. C. COOPER.

The Melting Point and Volatility of Chromium: W. C. ARSEM and HAROLD RUSH.

Electric Vacuum Furnace Installations in the Research Laboratory of the General Electric Company: W. C. ARSEM.

The Salts of Dichlor-tungstic Acid: W. C. ARSEM.

Oxalo-molybdic Acid and its Salts: W. C. ARSEM.

Molecular Attraction: J. E. MILLS.

The Internal Heat of Vaporization: J. E. MILLS.

On the Kinetics of Certain Inorganic Reactions in Heterogeneous Media: M. A. ROSANOFF and B. S. MERIGOLD.

DIVISION OF ORGANIC CHEMISTS

R. S. Curtiss, chairman

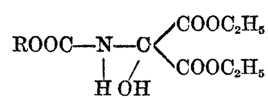
Ralph H. McKee, secretary

Condensations in the Mesoxalic Ester Series: R. S. CURTISS.

Condensations with oxomalonic esters and some alcohols, amines, acidamids and haloid acids have been tried with a view of forming intermediate addition products on the carbonyl group of the ester, also of studying the relative effect of groups of different degrees of positivity or negativity upon the reactivity of the ammonia radical with the carbonyl group of the ester, and the stability of the resulting addition products. Comparative studies of these reactions with methyl and ethyl oxomalonate have been made. Perfectly pure ethyl oxomalonate has been made by distilling the hydrate over P_2O_5.

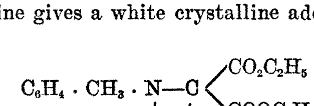
Ethyl, methyl, benzyl and propyl alcohols react with ethyl oxomalonate—with the characteristic loss of color of the keto ester, and formation of thick colorless syrups—which partially dissociate on being heated into the original constituents, and which are changed by water into alcohol and the dihydroxyester.

Ethylurethane forms a crystalline addition product,

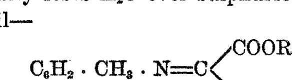


which is transformed into a faintly colored oil by P_2O_5. Urea reacts to give a colorless crystalline product also.

Aniline (1 mol.) reacts with ethyl oxomalonate to give ethyl dianilinomalonate. Attempts to get the intermediate addition body failed. However, *p*-toluidine gives a white crystalline addition compound,



which easily loses H_2O over sulphuric acid—yielding an oil—



This is in analogy with the action of aniline in methyl oxomalonate, which gives a colorless crystal body.

$$C_6H_5{-}\underset{\textstyle H}{\underset{|}{N}}{-}\underset{\textstyle OH}{\underset{/}{C}}\left\langle\begin{matrix}CO_2CH_3\\CO_2CH_3\end{matrix}\right.,$$

which by P_2O_5 is converted into an oil,

$$C_6H_5N{=}C\left\langle\begin{matrix}CO_2CH_3\\CO_2CH_3\end{matrix}\right..$$

This methyl phenyliminomalonate is a remarkable reaction substance, an analogue of phenyl isocyanate. The reactions of this, and analogous compounds in this series, are being investigated.

HCl and HBr appear to add on the carbonyl group of ethyl oxomalonate, but owing to the low temperature (below $-30°$) at which the crystalline products dissociate we have not been able to get true analytical figures as we have done with methyl oxomalonate and these acids, where one molecule of the acid is added to the keto ester.

Hydrogen Polysulphide as a Reducing Agent: ALFRED TINGLE.

The hydrogen polysulphide, or mixture of polysulphides, prepared by boiling lime with flowers of sulphur and acidifying the resulting cooled, clear liquid, possesses the following advantages as a reducing agent. It is neutral; it is readily soluble in ionizing media, such as water or alcohol, and also in non-ionizing liquids, such as carbon disulphide. The exact concentration of these solutions may be determined easily and with a high degree of accuracy by titration with iodine solution. Preliminary experiments on the reducing power of the polysulphide show that its reaction with nitrobenzene is vigorous, but rather complicated. Picric acid is easily reduced, at the ordinary temperature, to picramic acid. The work is being continued at the McMaster University.

Intramolecular Rearrangement of Phthalamidic Acids: J. BISHOP TINGLE and B. F. PARLETT BRENTON.

In continuation of the work of Bishop Tingle and Rolker[7] on the interaction of amines and phthalamidic acids, $RR'NCOC_6H_4CO_2H$, the authors have studied the action of pyridine, aniline and β-naphthylamine, respectively, on phthaldiphenylamidic, phthal-p-chlorphenylamidic and phthaldiisobutylamidic acids. An investigation has been made of the behavior of benzylamine with phthal-p-tolylamidic and with phthal-m-nitrophenylamidic acids; this latter acid has also been caused to react with the following additional bases: alcoholic ammonia, diisoamylamine, benzylethylamine, dibenzylamine, isoamylamine, butylamine, isobutylamine and tribenzylamine. The results are in general accord with the conclusions reached by Bishop Tingle and Rolker. Considering, for the sake of illustration, primary amines, RNH_2, and monosubstituted phthalamidic acids, $RNHCOC_6H_4CO_2H$, one or more of the following four products are formed:

$$C_6H_4\left\langle\begin{matrix}CO\\CO\end{matrix}\right\rangle NR,\qquad C_6H_4\left\langle\begin{matrix}CO\\CO\end{matrix}\right\rangle NR',$$

$$RNHCOC_6H_4CONHR' \quad\text{and}\quad C_6H_4(CONHR)_2.$$

[7] *J. Am. Chem. Soc.*, 30, 1882.

Action of Amines on Dicarboxylic Acids of the Aliphatic and Aromatic Series: J. BISHOP TINGLE and B. F. PARLETT BRENTON.

The work of Bishop Tingle with Messrs. Rolker and Brenton (cf. preceding abstract) has shown that, under certain conditions, the chief product of the interaction of amines, RNH_2, on phthalamidic acids, $R'NHCOC_6H_4CO_2H$, is an imide,

$$C_6H_4\left\langle\begin{matrix}CO\\CO\end{matrix}\right\rangle NR' \quad\text{or}\quad C_6H_4\left\langle\begin{matrix}CO\\CO\end{matrix}\right\rangle NR.$$

Occasionally, however, the unsymmetrical or the symmetrical diamide, $R'NHCOC_6H_4CONHR$, or $C_6H_4(CONHR')_2$, is also formed. Bishop Tingle and Bates (cf. following abstract) have found that, under suitable conditions, the diamide is the chief material from amines and dicarboxylic acids of the aliphatic series. Few if any of the unsymmetrical diamides are known. A study has been made, therefore, of the action of a variety of amines on phthalic acid, in the hope that, by selection of suitable experimental conditions and also of the groups R and R″ in the amine, RR″NH (R and R″ = hydrogen, alkyl, or aryl), a method might be developed for the preparation of unsymmetrical amides. The authors have obtained several of the compounds in question and have prepared, in the course of the work, a considerable number of new substances of other types which will be described in due course.

Aliphatic Phenylamidic (Anilic) Acids: J. BISHOP TINGLE and S. J. BATES.

It has been shown by Bishop Tingle and his co-workers that certain amidic acids of the phthalic series, $RNHCOC_6H_4CO_2H$, form salts with amines and that these salts quickly undergo condensation to the imide,

$$C_6H_4\left\langle\begin{matrix}CO\\CO\end{matrix}\right\rangle NR.$$

Similar experiments have been carried out with the following aliphatic amidic acids: furmaranilic, maleanilic, malanilic, tartranilic and oxanilic, but in no case could a similar transformation into the substituted imide be detected. Analogous results were obtained by Bishop Tingle and Lovelace for succinanilic acid.[8] It appears, therefore, that this capacity for intramolecular condensation is a specific property of aromatic acids. The chief products from the aliphatic acids appear to be symmetrical or unsymmetrical diamides, RNHCO ... CONHR, and RNHCO ... CONHR′, respectively. In the course of the work there has been prepared a considerable number of hitherto unknown salts and other derivatives of amines and of the acids mentioned above. These will be described later. In the case of the unsaturated acids the amines form additive compounds with great ease. The addition of the elements of the amine, H and NHR, takes place at the position of the double linkage. Experiments have also been made on the interaction of aniline and some acids of the itaconic series.

Action of Nitranilines on Certain Organic Acids: J. BISHOP TINGLE and C. E. BURKE.

In connection with the investigations of Bishop Tingle and Blanck on the nitration of *N*-acyl derivatives of aniline,[9] a study is being made of the action of the isomeric nitranilines on certain aliphatic and aromatic carboxylic acids. In addition to a number of salts which have not hitherto been described, the authors have prepared several new isomeric nitrophenylamidic (nitranilic) acids, $O_2NC_6H_4NHCO \cdots CO_2H$, nitrophenylamides (nitranilides), $O_2NC_6H_4NHCO \cdots CONHC_6H_4NO_2$ and $O_2NC_6H_4NHCO \cdots CONHR$, and nitrophenylimides (nitranils),

$$\begin{matrix}—CO\\—CO\end{matrix}\rangle NC_6H_4NO_2.$$

The results of the investigation promise to furnish some interesting data concerning the relationship between the structure of the nitranilines and the mode of their reactivity in this connection.

The following papers were reported by title:

A Study of Hydrazino Compounds: WM. MCPHERSON and HOWARD J. LUCAS.

A General Method for Preparing the Pure Sulphates of Hydroxyazo Compounds: WILLIAM MCPHERSON and CECIL BOORD.

[8] *Am. Chem. J.*, 38, 642.

[9] *J. Amer. Chem. Soc.*, 30, 1395, 1587.

Preparation and Oxidation of m-Nitrobenzoylformaldehyde: WM. L. EVANS and E. J. WITZEMANN.

On Some Amino and Nitroamino Derivatives of Benzoic, Metatoluic and Metaphthalic Acids: M. T. BOGERT and A. H. KROPFF.

On 2-methyl-3-amino-4-quinazolone and Certain of its Derivatives: M. T. BOGERT and R. A. GORTNER.

On Oxalylanthranilic Compounds and Some Quinazolines Derived therefrom: M. T. BOGERT and R. A. GORTNER.

Stereoisomeric Nitrogen Derivatives—Chlorimidoketones: JULIUS STIEGLITZ.

The Isolation of Some Further Organic Substances from Soil Humus: (1) *Alpha-hydroxystearic Acid,* (2) *Paraffinic Acid,* (3) *Liquid Fatty Acids:* OSWALD SCHREINER and EDMUND C. SHOREY.

The Action of Molecular Silver and Silver Sulphate on Ortho-brominated Triphenylcarbinolchlorides: M. GOMBERG and L. L. VAN SLYKE.

The Constitution of the Double Salts of Triphenylcarbinolhalides with Metal Halides: M. GOMBERG and L. P. KYRIAKIDES.

Glycogen Content of Beef Flesh: P. F. TROWBRIDGE and C. K. FRANCIS.

The Barium Salts of Phthalic Acid: F. B. ALLAN.

A Third Methyl Ester of Phthalic Acid: F. B. ALLAN and C. G. ALLIN.

The Preparation and Properties of Phthalyl Cyanide: F. B. ALLAN and C. H. ROBINSON.

The Rearrangement of Tautomeric Salts: SIDNEY NIEDLINGER.

Researches on Quinazolines (24th paper). On *6-methyl-7-aminoquinazolones, 7-nitroquinazolone-6 carboxylic acids, and 1, 3, 7, 9-naphthotetrazines:* M. T. BOGERT and A. H. KROPFF.

Simple χ-β Diglycerides: R. R. RENSHAW.

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